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William M. Dries

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EXAMINER

MEW, KEVIN D

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/564,731	Applicant(s) DRIES ET AL.	
	Examiner Kevin Mew	Art Unit 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,10-15 and 19-23 is/are rejected.
- 7) ☒ Claim(s) 3-9, 16-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/17/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

Claim Objections

1. Claim 10 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim 10, which is in alternative form, cannot depend on any other multiple dependent claim such as claim 8. See MPEP § 608.01(n). Accordingly, the claim 10 has not been further treated on the merits.

Claim 19 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim 19, which is in alternative form, cannot depend on any other multiple dependent claim such as claim 16. See MPEP § 608.01(n). Accordingly, the claim 19 has not been further treated on the merits.

Claims 12, 13, 20 are objected to because of the following informalities:

In line 1, claim 12, replace the word "anaylser" with "analyzer."

In line 4, claim 12, replace the word "anayse" with "analyze."

In line 1, claim 13, replace the word "analyser" with "analyzer."

In lines 1, 9, claim 20, replace the word "analysing" with "analyzing."

In line 6, claim 20, replace the word "analysed" with "analyzed."

In line 8, clam 20, replace the word "analyse" with "analyze."

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 14-20 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory “process” under 35 U.S.C. 101 must (1) be tied to particular machine, or (2) transform underlying subject matter (such as an article or material) to a different state or thing. See page 10 of *In Re Bilski* 88 USPQ2d 1385. The instant claims are neither positively tied to a particular machine that accomplishes the claimed method steps nor transform underlying subject matter, and therefore do not qualify as a statutory process. The method steps of enhancing resource management for routing events, as claimed in claim 14, are broad enough that the claim could be completely performed mentally or without a machine nor is any transformation apparent.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-2, 10-15, 19-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Alexander et al. (US Publication 2003/0002474).

Regarding claim 1, Alexander discloses a data merge unit (merging network, Fig. 2) for providing an interleaved data stream (creating interleaved groups, paragraph 0036), the data stream including data frames received on two or more input channels (the data stream including data received a plurality of input buses, paragraphs 0034-0035, Fig. 2), wherein complete data frames from each of the two or more input channels are arranged in time-slots of the interleaved data stream (generating time-multiplexed constant-width output data stream, paragraph 0020), the data merge unit (merging network, Fig. 2) comprising:

an input unit to receive data frames (shuffle buffer system to receive data streams, paragraph 0035 and element 7, Fig. 2) from two or more input channels (from a plurality of input buses, paragraph 0035 and element 5, Fig. 2);

a frame merge buffer (shuffle buffer) arranged to receive data frames from the two or more input channels via the input unit (reorders incoming data from the input buses) and store said data frames (and buffers them, paragraph 0036, and Fig. 2); and,

an output generator to generate the interleaved data stream (permutation network to create interleaved groups, element 9, Fig. 2), the output generator being configured to select complete data frames from the frame merge buffer (based on the input data width) and arrange said complete data frames in the interleaved data stream (rearranges the different data streams, paragraph 0036, and element 9, Fig. 2).

Regarding claim 2, Alexander discloses a data merge unit according to claim 1, in which the input unit is arranged to identify the end of each of said data frames (special spatial boundaries, paragraph 0022) and generate a pointer to identify the location of the end of each of said data frames in the frame merge buffer, for use in generating the interleaved data stream (creating interleaved words having a width wider than any of the received streams of data, paragraph 0022).

Regarding claim 10, Alexander discloses a data merge unit according to any of claims 1 to 9, the data merge unit being a hardware data merge unit (merging network comprises a plurality of hardware networks such as shuffle buffer network, permutation network, and pipelined butterfly network, paragraphs 0021-0022, and Fig. 2).

Regarding claim 11, Alexander discloses a data merge unit according to claim 10, in which the data merge unit is arranged in hardware selected from the group consisting of one or

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more Application Specific Integrated Circuits, one or more Field Programmable Gate Arrays, or any other suitably configured hardware (multi-stream merge apparatus, Figs. 1 and 2).

Regarding claim 12, Alexander discloses a network analyzer, comprising:

a data merge unit according to any of claims 1 to 11 (merging network, Fig. 2); and,

a logic unit (pipelined butterfly network, paragraph 0020 and element 11, Fig. 2) to analyze the interleaved data stream provided by said data merge unit (rearranging the received data streams into a time-multiplexed constant-width output data stream, paragraph 0020) and store said data frames (receiving a plurality of data streams, paragraph 0020).

Regarding claim 13, Alexander discloses a network analyzer according to claim 12, in which the logic unit is configured to provide one or more functions selected from the group consisting of network management and network load balancing (providing functions to manage multiple data streams, paragraph 0020).

Regarding claim 14, Alexander discloses a method of producing an interleaved data stream of data frames received on two or more input channels, the interleaved data stream being made up of complete data frames from each of the two or more input channels arranged in defined time-slots, the method comprising:

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receiving one or more data frames on two or more input channels (shuffle buffer system to receive data streams from a plurality of input buses, paragraph 0035 and elements 5, 7, Fig. 2);

storing said received data frames in a frame merge buffer (shuffle buffer receives and buffers the received data streams, paragraph 0036 and Fig. 2); and,

selecting complete data frames from the frame merge buffer (permutation network to create interleaved groups from the shuffle buffer, element 9, Fig. 2) and arranging said complete data frames in the interleaved data stream (rearranges the different data streams, paragraph 0036, and element 9, Fig. 2).

Regarding claim 15, Alexander discloses a method according to claim 14, in which the method comprises:

storing a pointer to identify the end of each of said received data frames (special spatial boundaries, paragraph 0022); and,

using said stored pointers to generate said interleaved data stream (creating interleaved words having a width wider than any of the received streams of data, paragraph 0022).

Regarding claim 19, Alexander discloses a method according to any of claims 14 to 18, in which the interleaved data stream is generated at full line rate of the input channels (output

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data stream having a width equal to the sum of the widths of the input data streams, paragraph 0020).

Regarding claim 20, Alexander discloses a method of analyzing a network, the method comprising:

producing an interleaved data stream of complete data frames received on two or more input channels according to the method of any of claims 14 to 19 (shuffle buffer system to receive data streams from a plurality of input buses, paragraph 0035 and elements 5, 7, Fig. 2), the data channels associated with a network to be analyzed (associated with telecommunications network, paragraph 0002);

providing said interleaved data stream to logic to analyze said data stream buffer (permutation network to create interleaved groups from the shuffle buffer, element 9, Fig. 2); and,

analyzing said data stream, thereby analyzing the network (analyzing data streams, paragraphs 0035-0037, 0039).

Regarding claim 21, Alexander discloses a data merge unit, comprising:

input means to receive data frames from two or more input channels (shuffle buffer system to receive data streams from a plurality of input buses, paragraph 0035 and elements 5, 7, Fig. 2);

data merge means (shuffle buffer system, permutation network, pipelines butterfly network, paragraphs 0035-0037, 0039 and elements 7, 9, 11, Fig. 2) to merge complete data frames received from the two or more input channels into a time division multiplexed interleaved data stream (generating time-multiplexed constant-width output data stream, paragraph 0020), wherein the data merge unit is arranged in hardware (multi-stream merge apparatus, Figs. 1 and 2).

Regarding claim 22, Alexander discloses a data merge unit according to claim 21, in which the hardware is selected from the group consisting of one or more Application Specific Integrated Circuits, one or more Field Programmable Gate Arrays, or any other suitably configured hardware (multi-stream merge apparatus, Figs. 1 and 2).

Regarding claim 23, Alexander discloses a data merge unit according to claim 21 or 22, in which the data merge means is arranged when merging data into the time division multiplexed interleaved data stream to ensure only complete data frames are provided in the time division multiplexed interleaved data stream (generating time-multiplexed constant-width output data stream, paragraph 0020).

Allowable Subject Matter

4. Claims 3-9, 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

In claim 3, a data merge unit according to claim 1, in which the output generator is operable in a first mode to select complete data frames in the frame merge buffer from an identified input channel and output the selected frames in a corresponding time-slot of the interleaved data stream for that input channel independently of other input channels and, in a second mode in which complete data frames from two or more of the two or more input channels are selected from the frame merge buffer and merged and provided in a common time-slot of the interleaved data stream.

In claim 8, a data merge unit according to any of claims 1 to 7, in which the input unit comprises a round-robin input arbiter arranged to service each of the two or more input channels and provide data frames therefrom to the frame merge buffer.

In claim 16, a method according to claims 14 or 15, in which the method comprises:

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in a first mode outputting complete data frames from a selected input channel in a corresponding time-slot of the interleaved data stream for that input channel independently of other input channels and in a second mode merging complete data frames from at least two of the two or more input channels and providing said merged data in a common time-slot of the interleaved data stream.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. M./
Examiner, Art Unit 2416

/Chi H Pham/
Supervisory Patent Examiner, Art Unit 2416
2/2/09